

Psittacine Beak and Feather Disease

What is psittacine beak and feather disease?

Psittacine beak and feather disease is a disease of parrot species (psittacine = parrot), often shortened to PBFD, that is lifelong and carries wide implications for the health of the affected bird as well as those sharing the environment both at the time and in the future.

Routes of transmission – how the disease spreads

PBFD is caused by a circovirus that is spread in feather dust, faeces (droppings) and crop contents. Any secretions that are produced from coughing, sneezing, vomiting or regurgitation may carry the disease, as will droppings. There is also a possibility that it can be spread from adults via the egg, but this remains an unproven theory at present.

One of the main problems with PBFD is that it lasts for a long time in the environment – up to 18 months in organic matter. The majority of affected birds contract the virus at an early age, but infection can also occur in later life, and occurs during active feather growth.

If an affected bird is kept within an aviary, all other birds within the aviary will be exposed, although not all of them will necessarily contract the disease. However, healthy birds should ideally be identified via laboratory testing and removed to a clean environment.

Once a bird with PBFD has been identified, no new birds should be introduced (unless they too have PBFD or are not a parrot species). It should also be noted that because of the stability of the virus in the environment, **no new birds should be acquired for at least 18 months after the affected bird(s) have passed away.**

Which species are affected?

PBFD is common in Australian, African and Asian parrot species including Cockateils, Love Birds, and Ring-neck Parakeets to name but a few. It can cause profound immunosuppression and bone marrow suppression in these individuals, meaning that they are far more susceptible to usually innocuous infections than others are.

What do we see in these patients?

There are many different clinical appearances that accompany PBFD, and some, all or none may be noted in any particular individual. These clinical signs (symptoms) include:-

- ❖ Sudden death in the peracute form of the disease – this is usually the case in very young birds and is a result of septicaemia (an overwhelming infection of the blood) from various secondary infections rather than from the virus itself.
- ❖ A shiny appearance to the beak and claws – parrot species are often very dusty birds and should have a powder coating over the beak and claws. With birds infected with PBFD, this layer is often missing, giving a shiny appearance to the nails and beak.
- ❖ Incomplete feather growth or complete absence of feathers

- ❖ Pinched feathers where they fall off – the poor growth of feathers often results in constriction of the feather shaft, so the tips of the feathers are sheared part-way along the shaft.
- ❖ The flight feathers (the long ones on the wings and tail) are affected more noticeably but all feathers may be affected.
- ❖ PBFDF may also cause colour changes to the feathers (classically grey feathers turn to pink, and black feathers turn to white).
- ❖ The beak and claws may degenerate in these patients, leaving broken patches in the beak and claws.
- ❖ PBFDF causes generalised immunosuppression, so affected birds are generally more ill than normal birds, and may succumb to minor infections more readily.

Diagnosis

Diagnosis of PBFDF is based on a blood test or on a sample from pulpy feathers. In more difficult cases, these tests may also be performed on bone marrow. In some cases, there may be a very high index of clinical suspicion based on the clinical signs and the age of the bird (the youngest birds affected suffer the most rapid course of infection).

It should be noted that in rare cases, a test may result in a positive result when the bird does not actually have PBFDF (usually this happens with routine screening of otherwise healthy birds). This is because of the methods used to detect the virus, but true positives can be identified by repeating the test 60-90 days after the initial test. If the test gives a negative result, this can be taken as a true representation of the bird's health (i.e. PBFDF is not present).

Can I contract this disease?

PBFDF is a disease of parrot species and does not cross genetic barriers, so cannot be contracted by people. However, it is very easily spread between birds via feather dust and secretions, and very easily carried by people to other avian environments on clothing and shoes. Strict hygiene should be observed to prevent transmission to other birds, including rigorous washing and clothing changes.

Treatment

There is no specific treatment for PBFDF – once the virus has obtained access to the cells in the body, there is no way of getting it back out again. Treatment is therefore not aimed at curing the bird, but at supporting it through any secondary infections. It is for this reason that PBFDF is often referred to as the HIV of the avian world – it can remain dormant for long periods of time without causing any ill health, but causes a profound suppression of immunity once active. Treatments may include nutritional support, fluid therapy, antibiotics, and the use of pre-emptive vitamin, mineral and probiotic formulas. PBFDF will eventually cause death through secondary infection and multiorgan failure in affected patients, but these birds may live for many years and be very happy birds, even if bald! The lifespan of these patients is reduced from the usual expected lifespan for that species, but the reduction depends on many factors and may be as little as $\frac{1}{4}$ of a normal lifespan. It is important to be well informed when living with these birds so that veterinary aid can be sought at the first sign that there is something wrong, but it is also important to remember that these birds are normal in all other ways and will still want to live life to the full at every opportunity!